

AMENDMENT UNDER 37 CFR § 1.111
Application No. 09/903,476

REMARKS

Interview Summary

Applicants appreciate the Examiner's granting an interview on August 13, 2003. All rejected claims were discussed, but no agreement was reached.

Applicants noted that the catalysts exemplified by Chu et al. are catalysts effective only for vapor phase alkylation of aromatic compounds and that the reaction conditions presented in Examples 1 and 2 of Chu et al. (400°C and atmospheric pressure as compared to the boiling point of toluene at 251°C) were also vapor phase conditions, such that Chu et al. did not anticipate the liquid phase reaction conditions of claim 37.

Summary of Status of Claims

Claims 13 through 23 and 25 through 37 are presently pending in this application, claims 13, 19, and 27 being independent. Claims 13-18 and 35 are allowed, and claims 19 through 23, 25 through 34, 36, and 37 presently stand rejected.

Response to the Rejection Under 35 U.S.C. § 112

Claim 27 has been amended to claim increased mono-selectivity in the step of contacting with an aqueous medium, eliminating the "and/or" objected to by the Examiner. Support for the amended claim is found in the specification at page 13, Table and lines 6 through 10.

Response to the Rejection Under 35 U.S.C. § 102(b) and 103(a)

Claims 25, 27 to 29, 32 to 34, and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Chu et al. (U.S. Patent No. 4,886,616). The Examiner stated that Chu et al. (abstract; col. 10, line 56 through col. 11, line 25; the examples, namely example 4) disclose a process of alkylation of an aromatic hydrocarbon, such as toluene, with an olefin, such as ethylene, in the presence of a molecular sieve catalyst, which, after a period of use, is regenerated with air and an aqueous medium containing acetic acid.

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It is respectfully noted that claim 27 has been amended to cover a process for alkylating an aromatic compound to produce a mono-alkylaromatic compound, whereas Chu et al. describe treatment with the acetic acid for the specific purpose of restoring para-selectivity to a catalyst modified by the addition of certain metal and/or phosphorous oxides.

Second, in the claimed process, regeneration in an oxygen containing medium is a required step whereas Chu et al. only include an oxygen regeneration step in Example 4 as a negative comparative example, thereby teaching away from the present process.

Applicants respectfully submit that Chu et al. neither anticipate nor render obvious a treatment with an aqueous medium for the purpose of restoring mono-selectivity of a molecular sieve catalyst used in a process to produce a mono-alkylaromatic compound.

Response to the Rejection Under 35 U.S.C. § 103(a)

Claims 19-23, 26, 31, and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chu et al. (U.S. Patent No. 4,886,616) alone or, alternatively, in view of Huss, Jr. et al. (U.S. Patent No. 5,030,785).

The Examiner acknowledged that Chu et al. do not disclose that the sieve is MCM-22. The Examiner directed attention to Chu et al., the abstract, stating that the zeolite has a constraint index of 1 to 12. The Examiner relied upon Huss et al., table, at column 5, lines 13 and 14 showing that MCM-22 has a constraint index of 1.5.

As noted above, Applicants respectfully submit that Chu et al. neither anticipate nor render obvious a treatment with an aqueous medium for the purpose of restoring mono-selectivity of a molecular sieve catalyst used in a process to produce a mono-alkylaromatic compound.

The Examiner has relied upon a selected portion of the abstract which speaks of a constraint index. The abstract also states that the zeolite which can be treated in accordance with the Chu et al. invention must have a silica to alumina ratio of at least 12 and have a minor proportion of the oxide form of one or more chemical elements (e.g. phosphorous and magnesium) deposited thereon. The Examiner, however, has not shown

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that MCM-22 has the other properties required for use in the Chu et al. invention. It is again noted that Table 1 on page 13 of the specification indicates that the present invention results in a reduction in para-selectivity for MCM-22, a clear difference from the Chu et al. invention.

Reconsideration and withdrawal of the present rejection are respectfully requested.

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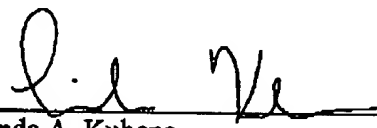
CONCLUSION

For the reasons advanced above, Applicants respectfully submit that all pending claims patentably define Applicants' invention. Allowance of the application is therefore respectfully requested.

Should the Examiner have any further comments or questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

Date 9/16/03


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